

October 4, 2012

Don Mitchell
McMillin Land Development
P.O. Box 85104
San Diego, CA 92186
City, State, Zip

Subject: Quarry Creek Floodplain

Dear Don:

The attached exhibit delineates the proposed floodplains associated with your Quarry Creek Master Vesting Tentative Map C.T. 11-04. The red line defines the 100-year floodplain, while the green line defines the Federal Emergency Management Agency's (FEMA) shaded Zone X floodplain. The shaded Zone X floodplain was previously referred to by FEMA as a Zone B floodplain. A shaded Zone X can represent the 500-year floodplain, shallow flooding areas, or areas protected by levees. The portion of the green line that extends over the mass graded pad north of Buena Vista Creek represents the area protected by the levee that was constructed as part of Hanson Aggregates quarry reclamation. The levee was designed and constructed according to the FEMA's criteria, which requires increased freeboard and specific embankment and foundation stability factors-of safety. FEMA places greater requirements on levees since they are frequently used to protect development from flood flows. Hydraulic and geotechnical analyses for the levee have been approved by the City of Carlsbad and City of Oceanside as part of the approval of the reclamation grading plan. The portion of the green line that extends onto the Quarry Creek Shopping Center ties into an existing shaded Zone X that encompasses the majority of the shopping center. A shaded Zone X was delineated over the shopping center because it is protected by a levee.


A shaded Zone X floodplain is considered by FEMA to be an area of moderate to low flood risk (see attached for a definition of flood zones). Flood insurance is not federally required in a shaded Zone X. On the other hand, the 100-year floodplain (red line) is a Zone AE floodplain, which is considered to be an area of high flooding risk and where mandatory flood insurance requirements would apply for insurable structures. However, no insurable structures will be constructed in the 100-year floodplain.

Sincerely,



Wayne W. Chang, M.S., P.E.

Enclosures

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Definitions of FEMA Flood Zone Designations

Flood zones are geographic areas that the FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map. Each zone reflects the severity or type of flooding in the area.

Moderate to Low Risk Areas

In communities that participate in the NFIP, flood insurance is available to all property owners and renters in these zones:

ZONE	DESCRIPTION
B and X (shaded)	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. Are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
C and X (unshaded)	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level.

High Risk Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

ZONE	DESCRIPTION
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
A1-30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.
AO	River or stream flood hazard areas, and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones.
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

High Risk - Coastal Areas

In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all of these zones:

ZONE	DESCRIPTION
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
VE, V1 - 30	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

Undetermined Risk Areas

ZONE	DESCRIPTION
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.

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GRAPHIC SCALE
0 50 100
1 INCH = 100 FEET



- LEGEND:
- PROPERTY LINE
 - HEC-RAS CROSS-SECTION
 - PROPOSED 100-YEAR FLOODPLAIN
 - PROPOSED SHADED ZONE X (500-YEAR FLOODPLAIN OR AREA PROTECTED BY LEVEE)

FLOODPLAIN MAPPING
QUARRY CREEK MASTER VESTING
TENTATIVE MAP C.T. 11-04